Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of processing a plurality of source images, comprising ~~the steps of~~:

receiving image data representative of a polychromatic source image and encoding first and second separation images representing the polychromatic source image in a composite image;

rendering the composite image on a substrate by use of a plurality of colorants; and recovering the encoded separation images from the rendered composite image, such that the polychromatic source image is made distinguishable as a normalized color image, by subjecting the rendered composite image to an illuminant having a predefined spectral power distribution that is selected to reveal the normalized color image. .

2. (Original) The method of claim 1, wherein the source image encoding step further comprises the step of mapping values representative of each separation image pixel to a corresponding pixel value in a respective colorant image plane.

3. (Original) The method of claim 2, wherein the mapped values are determined according to at least one of the following: (a) the trichromacy of human visual response to colorant/illuminant interaction; (b) the spectral characteristics of the colorants selected for rendering the composite image, and (c) the spectral characteristics of the narrow-band illuminant(s) used for recovering the source image.

4. (Currently Amended) The method of claim 3, wherein the source image encoding step further comprises ~~the steps of~~:

receiving image data representative of a second source image and converting the second source image to a third separation image; and mapping the third separation image to a corresponding colorant image plane in the composite image.

5. (Original) The method of claim 4, wherein a narrow band colorant is assigned to a respective colorant image plane of the composite image, and the mapped values in the respective colorant image planes represent the relative amounts of the narrow band colorant to be deposited in the rendered composite image.

6. (Original) The method of claim 1, wherein the composite image is rendered as pattern of deposited narrow band colorants, each of which narrow band colorants exhibiting a predefined spectral reflectance characteristic.

7. (Original) The method of claim 6, wherein the selected narrow band colorant exhibits a predefined narrow band absorption characteristic.

8. (Original) The method of claim 7, wherein the selected narrow band colorant is selected from the group of cyan, magenta, and yellow colorants.

9. (Original) The method of claim 1, wherein the predefined spectral power distribution of the illuminant is selected from the group of red, green, and blue wavelength regions of the spectrum.

10. (Original) The method of claim 1, wherein the rendered composite image is rendered using a digital color electrophotographic printer.

11. (Original) An imaging system, comprising:

a spectral multiplexer for receiving image data representative of a polychromatic source image and for processing the image data to encode at least first and second separation images representing the polychromatic source image in a composite image, and for providing a composite image data signal;

an image rendering device which is responsive to the spectral multiplexer for receiving the composite image data signal and for rendering the composite image on a substrate; and

a spectral demultiplexer for subjecting the rendered composite image on the substrate to illumination by an illuminant having a predefined spectral power distribution for which the polychromatic source image was encoded, such that a normalized color image derived from one of the encoded source images is recovered when the rendered composite image is subjected to the illuminant.

12. (Original) The imaging system of claim 11, wherein the spectral multiplexer is operable for mapping values representative of each source image pixel to a corresponding pixel value in a respective colorant image plane.

13. (Original) The system of claim 12, wherein the mapped values are determined according to at least one of the following: (a) the trichromacy of human visual response to colorant/illuminant interaction; (b) the spectral characteristics of the colorants selected for rendering the composite image, and (c) the spectral characteristics of the narrow-band illuminant(s) used for recovering the source image.

14. (Original) The imaging system of claim 11, wherein the spectral multiplexer is operable for spectrally encoding the polychromatic source image by mapping pixel values representative of plural separation images to a corresponding pixel value in one or more of a plurality of colorant image planes.

15. (Original) The imaging system of claim 14, wherein the separation images define the polychromatic source image according to the separation image planes, and wherein the composite image is defined in a spectrally multiplexed (SM) image plane having patterns of pixels, whereby at each location in the SM image plane, a pixel value representing one or more spectral components may be present, and wherein the pixel value patterns are determined according to the gray level of the corresponding pixels in one or more of the separation image planes.

16. (Original) The imaging system of claim 15, wherein the spectral multiplexer is operable for is spectrally multiplexing to the SM image plane wherein certain pixels

includes color values representative of color separation image data from more than one source image plane.

17. (Original) The imaging system of claim 12, wherein the spectral multiplexer is operable for converting the polychromatic source image to an array of respective monochromatic separation images, each of which being mapped to a corresponding colorant image plane in the composite image, and the plurality of separation images being mapped to a corresponding plurality of colorant image planes in the composite image.

18. (Original) The imaging system of claim 12, wherein the spectral multiplexer is operable for assigning each colorant to a respective colorant image plane of the composite image, and the colorant values in the respective colorant image planes represent the relative amounts of colorant to be deposited in the rendered composite image.

19. (Original) The imaging system of claim 11, wherein the spectral multiplexer is operable for receiving image data representative of the polychromatic source image, and converting, when necessary, the array of image data representative of the polychromatic source image to respective separation images, and wherein the spectral multiplexer is operable for receiving second image data which is representative of a second source image, and for converting, when necessary, the second source data to provide a respective monochromatic image, wherein the separation images and the monochromatic image are mapped to corresponding ones of plural colorant image planes in the composite image, and wherein the resulting composite image incorporates spectrally encoded information representing both the first (polychromatic) source image and a monochromatic version of the second source image.

20. (Original) The imaging system of claim 11, wherein a mode of operation is provided for recovering a normalized color version of, the encoded source image from the rendered composite image such that a normalized color image is made

distinguishable to an observer.

21. (Original) The imaging system of claim 11, wherein the spectral demultiplexer is operable in a first mode wherein the normalized color image is recovered when the rendered composite image is illuminated by a controlled field of illumination of a first illuminant having a selected multiband spectral power distribution.

22. (Original) The imaging system of claim 21, wherein the spectral demultiplexer is operable in a second mode wherein a second source image presented in a rendered composite image is recovered when the rendered composite image is illuminated by a controlled field of illumination of a second illuminant having a selected narrowband spectral power distribution.

23. (Original) The imaging system of claim 22, wherein the spectral demultiplexer is operable in a first mode of operation to subject the rendered composite image to a first illuminant exhibiting a spectral power distribution located in the spectral power distributions of complementary illuminants for at least first and second respective colorants, such that at least two separation images (representing the first source image) are recoverable so as to form a normalized color image, and in a second, optional, mode of operation wherein the rendered composite image is subjected to a second illuminant exhibiting a spectral power distribution located in the spectral power distribution of the complementary illuminant for a third respective colorant.

24. (Original) The imaging system of claim 21, wherein the spectral demultiplexer is operable for subjecting the rendered composite image to an incident light spectrum having a selected spectral power distribution in at least two of three selectable bands of radiant energy.

25. (Original) The imaging system of claim 24, wherein the first illuminant is selected from at least two of the long, medium, and short (LMS) wavelength bands of the light spectrum, and the second illuminant is selected from at least the remaining

third of the long, medium, and short (LMS) wavelength bands of the light spectrum.

26. (Original) The imaging system of claim 11, wherein the spectral demultiplexer includes a controller and an illuminant source responsive to illuminant source control signals provided by the controller, and wherein the illuminant source includes one or more light sources for providing desired spectral power distributions in plural selectable bands of radiant energy.

27. (Original) The imaging system of claim 26, wherein the selectable bands correspond to the long, medium, and short (LMS) wavelength bands of the light spectrum.

28. (Original) The imaging system of claim 11, wherein the image rendering device employs at least one selected colorant selected for its narrow band absorbing properties so as to appear dark when subjected to a first illuminant having a spectral power distribution that lies substantially within the spectral absorption band of the selected colorant, and to appear light when subjected to a second, differing illuminant having a spectral power distribution that lies substantially outside of the spectral absorption band of the selected colorant.

29. (Original) The imaging system of claim 11, wherein the spectral multiplexer is provided in the form of a computer for receiving image data files representative of a plurality of source images and for encoding the image data files as a composite image data file.

30. (Original) The imaging system of claim 11, further comprising at least one of a composite image file storage device and a composite image file transmission device.

31. (Original) The imaging system of claim 11, wherein the spectral multiplexer is operable to perform a dynamic range determination so as to provide a maximum usable contrast in a recovered normalized image.

32. (Original) The imaging system of claim 11, wherein the spectral multiplexer is operable to perform a dynamic range determination by permuting the allocation of the source image to differing monochromatic separations, in an image-dependent fashion, so as to restrict the gamut of the source image only to the extent required by the source image.

33. (Original) The imaging system of claim 32, wherein the dynamic range determination includes limiting the gamut of the source image.

34. (Original) The imaging system of claim 11, wherein the spectral multiplexer is operable to perform the addition of image masking signals to the source image.

35. (Original) The imaging system of claim 11, wherein the image recording device is provided in the form of a printer for printing the composite image on a substrate.

36. (Original) The imaging system of claim 35, wherein the printer includes one or more of cyan, magenta, yellow, and black colorants selected for their apparent darkness when exposed to complementary illuminants.